Vaccine-induced COVID-19 variants and its impact on the Unvaccinated

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Type 1 interferon response is a major anti-viral defense important for immune activation. It is one of the first innate immune barriers against viruses and provides early defense against viral activity. However, early clearance of viral activity can limit the dynamic of antigen availability and subsequent antibody response needed for the development of more circulating antibodies indicative of strong adaptive immunity. Basically, adequate exposure to the antigen allows the body to produce more antibodies, which would provide protection against later infections by the virus. This exposure becomes limited when the type 1 interferon response acts against the virus. The COVID-19 vaccines thus inhibits the type 1 interferon response so that overall active and adaptive immunity can be more efficient. Theoretically this would increase one's chances of infection, but lower one's chances of serious illness and death. However, in this trade-off of inhibiting the type 1 interferon response, the virus is allowed to live longer, spread amongst the population, and mutate. This ultimately places the unvaccinated at serious risk of deadly infection since the virus has become incrementally resistant to the higher antibody level of the vaccinated, making it all the more stronger against the lower antibody level of the unvaccinated. This essentially leaves the unvaccinated population with no other option but to get vaccinated. Unanimous consensus becomes imperative. The entire population has to either agree to vaccinate or agree not to vaccinate. There could be no in-between. All it would take is a few vaccinated people within a largely unvaccinated population to become infected and set off a much stronger strain of the virus on the unvaccinated. This is likely what happened in India and South America with the Delta and Lambda variants respectively. While vaccinations didn't begin

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in India until 3 months after the delta variant emerged, vaccine trials of Bharat Biotech's Covaxin(India's COVID-19 vaccine) started on July 15th 2020 in India.

The danger of infected vaccinated on the unvaccinated also applies to households. A fully vaccinated asymptomatic carrier can place the unvaccinated family members of his/her household at serious risk of severe illness.

Conversely in a vaccine that would theoretically opt for a greater type-1 interferon response at the expense of antibody development, the virus would not last long enough to grow stronger and mutate. In this scenario, adaptive immunity to the virus would be inhibited and while the chances of being infected would be lower due to higher type 1 interferon response, the odds of serious illness and death become higher in the event that the person does become infected. However, the spread of the virus in that scenario is lower. Type 1 interferons are likely the key in reducing the spread of coronavirus. If this is the case and if the goal is to stop the spread of COVID-19 variants, the current COVID-19 vaccines will have to be halted since they inhibit the type 1 interferon response and have no effect on the spread of the virus. It was stated by the CDC that the vaccinated can spread the virus as much as the unvaccinated.

Bibliography

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3411909/

https://www.nature.com/articles/s41577-021-00526-x

https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1003962

https://www.hindustantimes.com/india-news/first-phase-trial-of-covaxin-india-s-covid-19-vaccine-starts-on-375-people-

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report/story-B6PjvEIG802stUjuuYXxGJ.html